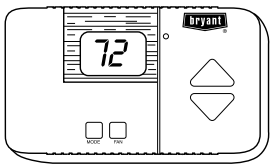
bryant
Heating & Cooling Systems

THERMOSTATS
THERMIDISTAT™ CONTROL

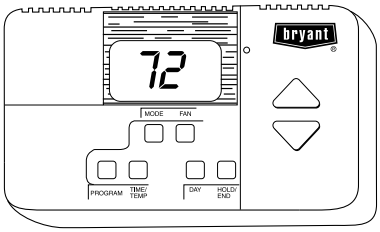
MODEL
TSTAT

BUILDER'S MODEL THERMOSTAT



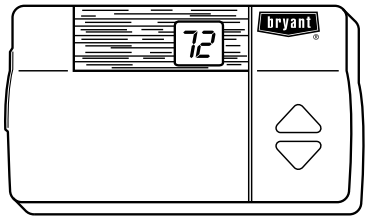
* Models (AC, HP)

STANDARD PROGRAMMABLE THERMOSTAT



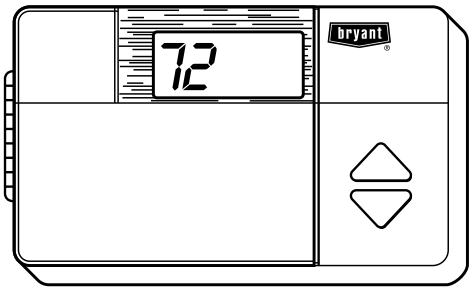
* Models (AC, HP)

NON-PROGRAMMABLE THERMOSTAT



* Models (AC, HP, 2S)

PROGRAMMABLE THERMOSTAT, DUAL FUEL, AND THERMIDISTAT™ CONTROL



* Models (AC, HP, 2S)
* Dual Fuel Model (DF)
* Thermidistat™ Control Model (RH)

The Bryant electronic thermostat product line consists of programmable and non-programmable air conditioner, heat pump, and 2-speed models; a programmable dual fuel model; and a programmable/non-programmable Thermidistat™ Control. Bryant also offers builder's and standard programmable thermostats in both air conditioner and heat pump models. These units feature non-mercury based electronic controls built into a subtle, slim plastic enclosure. They require no battery back-up.

FEATURES/BENEFITS

BUILDER'S THERMOSTATS

COMPLETE OFFERING—Non-programmable air conditioner and heat pump models available.

EASY TO USE—Rubber push buttons provide easy changes to heating/cooling mode operation, fan operation, and desired temperature setting.

MANUAL CHANGEOVER—Allows manual switches in system operation when both heating and cooling are needed on the same day.

STANDARD PROGRAMMABLE THERMOSTATS

Bryant Standard Programmable Thermostats posess the same features as the Builder's Thermostats plus:

COMFORT AND ENERGY SAVINGS—5-2 Day Programming with four temperature changes per day means comfort for the family.

EASY TO READ—Large LCD with clock.

NON-PROGRAMMABLE THERMOSTATS

CLEAN DESIGN—Features soft, responsive buttons and an easy-to-read backlit Liquid Crystal Display (LCD).

ACCURATE, RELIABLE TEMPERATURE CONTROL—LCD shows current room temperature at all times, and desired temperature prompts upon demand.

AUTO CHANGEOVER—Switches system operation automatically when both heating and cooling are needed on the same day. It can be disabled if not necessary in certain areas of the country.

OUTDOOR TEMPERATURE DISPLAY—Allows a check of the temperature outside before leaving home. (Optional on heat pump and 2-speed models.)

CLEAN FILTER INDICATOR—Tells when it is time to clean the system's filter.

BATTERY FREE—Non-volatile RAM chip requires no battery backup.

EQUIPMENT ON INDICATOR—On all non-programmable models, HEAT ON or COOL ON indicator is displayed when the heating or cooling equipment is operating.

PERFECT COMPLEMENT—Completes your Bryant total comfort system needs.

LIMITED WARRANTY—Standard 1-year warranty available on all parts.

PROGRAMMABLE THERMOSTATS

Bryant programmable thermostats possess the same features as non-programmable thermostats plus:

COMFORT AND ENERGY SAVINGS—Seven day programming, with 4 temperature changes provided per day, means comfort when the family is at home and savings through reduced energy usage when the family is away or asleep.

EASY TO USE—Simple instructions are located inside the thermostat's door.

DUPLICATE PROGRAMMING—Copy the comfort schedule from one day to the next using the copy previous day function.

OVERRIDE CAPABILITY—Hold function allows the regular schedule to be bypassed with a temporary setting.

BATTERY-FREE—Non-volatile RAM chip requires no battery backup. Program is retained in memory so reprogramming is not required after power loss.

SMART RECOVERY—Provides consistent heating right on time as it gradually adjusts indoor temperatures before a scheduled change.

TIMEGUARD—Equipment protection.

DUAL FUEL MODEL

The dual fuel thermostat can be used to control a gas furnace and a heat pump. This thermostat eliminates the need for an interface control kit. The outdoor temperature sensor is included.

THERMIDISTAT™ CONTROL

Bryant's Thermidistat Control can be used to control any equipment application except zoning. It possesses all the features and benefits of Bryant's non-programmable and programmable thermostats plus:

ENHANCED COMFORT—Allows the homeowner to accurately maintain the desired temperature and humidity settings in the home. By combining the functions of a programmable/non-programmable thermostat and a humidistat, the Thermidistat Control provides temperature control, humidity control, and dehumidification.

HUMIDITY CONTROL—The Thermidistat Control accurately controls humidity. It controls humidification during heating and dehumidification during cooling.

AUTOMATIC HUMIDITY ADJUSTMENT—When used with the outdoor temperature sensor, the Thermidistat Control automatically adjusts the humidify setting, reducing excess condensation from forming on the windows.

VACATION MODE—With a single touch of a button, vacation mode adjusts all comfort levels for optimum efficiency while the home is unoccupied—or restores the settings to normal upon return.

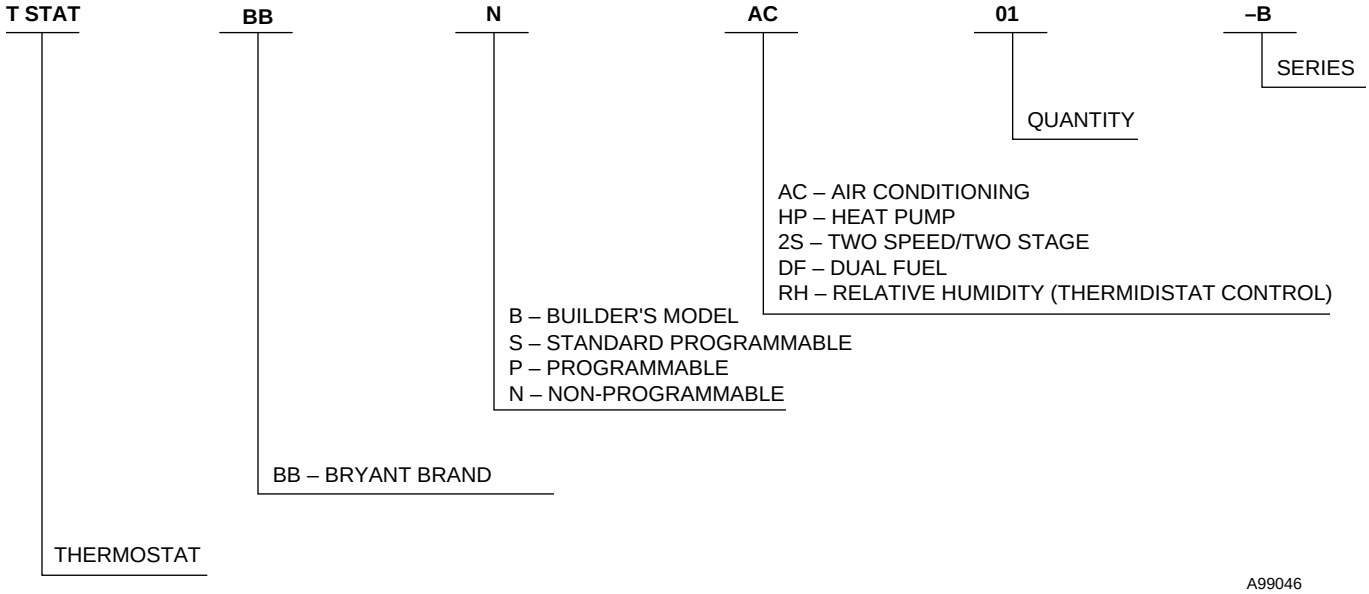
SMART RECOVERY—Provides consistent heating and cooling right on time as it gradually adjusts indoor temperatures before a scheduled change.

EQUIPMENT ON INDICATOR—When the cooling system is operating, the word COOL preceded by a small triangle is displayed below the cooling set point. When the heating equipment is operating, the word HEAT preceded by a small triangle is displayed below the heating set point. If the equipment turn on is being delayed, the triangle and the word will flash.

NON-PROGRAMMABLE OPTION—Offers the same popular humidity control benefits to consumers who do not need the added benefits of programming. Nine functional buttons, along with the UP and DOWN buttons, make it easy to enter the temperature and humidity set points. The LCD is the largest display on the market for a non-programmable thermostat.

MODEL NUMBER NOMENCLATURE

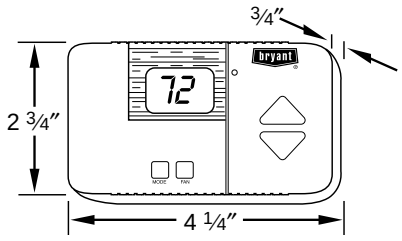
ELECTRONIC THERMOSTATS



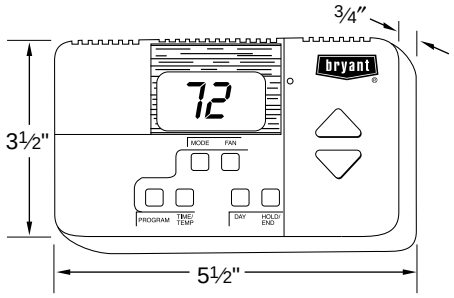
A99046

As an ENERGY STAR® Partner, Bryant Heating & Cooling Systems has determined that the programmable thermostats and programmable Thermidistat Control meet the ENERGY STAR® guidelines for energy efficiency.

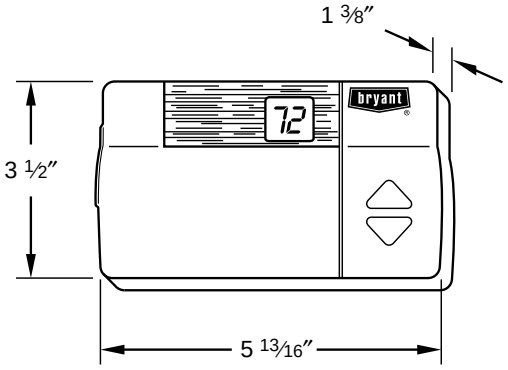
DIMENSIONS



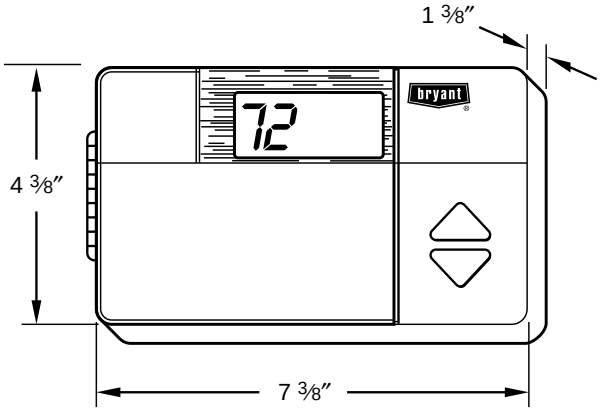
Builder's Model Thermostat



Standard Programmable Thermostat



Non-Programmable Thermostat



Programmable Thermostat and Thermidistat Control

A99224

PRODUCT DATA INFORMATION

PHYSICAL CHARACTERISTICS

Builder's/Standard Programmable Models:

Dimensions: See drawing
Appearance: Plastic, designer white, textured, white rubber push buttons

Non-Programmable/Programmable Models:

Dimensions: See drawing
Appearance: Plastic, eggshell color, textured

ELECTRICAL CHARACTERISTICS

Builder's/Standard Programmable Models:

Input Volts/Amps: 24vac, 1 VA

Non-Programmable/Programmable Models:

Input Volts/Amps: 24vac, 5 VA

ENVIRONMENTAL REQUIREMENTS:

Operating Temperature/Relative Humidity: 32°F (0°C) to 104°F (40°C), 95% rh non-condensing
Storage Temperature/Relative Humidity: –40°F (–40°C) to 134°F (56°C), 95% rh non-condensing

PROGRAM SPECIFICATIONS:

Builder's/Standard Programmable Models:

Temperature set point range: 50°F (10°C) to 90°F (32°C)
Manual changeover
Non-volatile memory
Fahrenheit or Celsius selectable
Power-stealing option on AC model
Selectable fan ON or OFF with auxiliary heating (HP model)
Five-minute compressor timeguard
Four cycles per hour maximum
Auxiliary heat LED on heat pump models

Non-Programmable Models:

Temperature set point range: 40°F (4°C) to 90°F (32°C)
Separate heat and cool set points
Auto changeover—can be disabled
Clean filter reminder: installer adjustable
Permanent memory
Equipment On indicator

Programmable Models:

Temperature set point range: 40°F (4°C) to 90°F (32°C)
Separate heat and cool set points
Auto changeover—can be disabled
Clean filter reminder: installer adjustable
Permanent memory
Programming days: 7 day
Programming periods: 4—Wake, Day, Eve, Sleep
Hold function
Copy previous day function
Humidity display and control (Thermidistat Control only)
Equipment On indicator (Thermidistat Control only)

WIRING REQUIREMENTS:

Power: 24vac nominal, 18- to 30-vac, 50/60 Hz
Wiring: Standard thermostat wire 18 to 22 gage.

DESCRIPTION

BUILDER'S MODEL THERMOSTATS

PART NO.	DESCRIPTION
TSTATBBBAC01-B*	Thermostat, Air Conditioner, Non-Programmable, 1-Stage Heat/1-Stage Cool, Manual Changeover, °F/°C
TSTATBBBHP01-B†	Thermostat, Heat Pump, Non-Programmable, 2-Stage Heat/1-Stage Cool, Manual Changeover, °F/°C

* Furnace model numbers 355MAV, 373LAD, 383KAD, 394HAD, 396HAD, 361A, 362A, 363A, 367A, 369A, and 349MAV; and the Thermostat Conversion Kit are not compatible with these thermostats.
† Do not use in zoning applications.

STANDARD PROGRAMMABLE THERMOSTATS

PART NO.	DESCRIPTION
TSTATBBSAC01*	Thermostat, Air Conditioner, 5-2 Day Programmable, 1-Stage Heat/1-Stage Cool, Manual Changeover, °F/°C
TSTATBBSHP01†	Thermostat, Heat Pump, 5-2 Day Programmable, 2-Stage Heat/1-Stage Cool, Manual Changeover, °F/°C

* Thermostat Conversion Kit is not compatible with these thermostats.
† Do not use in zoning applications.

NON-PROGRAMMABLE ELECTRONIC THERMOSTATS

PART NO.	DESCRIPTION
TSTATBBNAC01-B	Thermostat, Auto Changeover, Non-Programmable, °F/°C, 1-Stage Heat/1-Stage Cool
TSTATBBNHP01-B	Thermostat, Auto Changeover, Non-Programmable, °F/°C, 2-Stage Heat/1-Stage Cool
TSTATBBN2S01-B	Thermostat, Auto Changeover, Non-Programmable, °F/°C, 2-Stage Heat/2-Stage Cool in AC Mode, 3-Stage Heat/2-Stage Cool in HP Mode

PROGRAMMABLE ELECTRONIC THERMOSTATS

PART NO.	DESCRIPTION
TSTATBBPAC01-B	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 1-Stage Heat/1-Stage Cool
TSTATBBPHP01-B	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 2-Stage Heat/1-Stage Cool
TSTATBBP2S01-B	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 2-Stage Heat/2-Stage Cool in AC Mode, 3-Stage Heat/2-Stage Cool in HP Mode
TSTATBBPDF01-B*	Dual Fuel Thermostat, Includes Outdoor Air Temperature Sensor
TSTATBBPRH01-B*	Thermidistat Control — Non-Programmable/Programmable Thermostat with Humidity Control (For use in Dual Fuel, AC, HP, and 2S applications. Includes Outdoor Air Temperature Sensor.)

* Do not use in zoning applications.

THERMOSTAT ACCESSORIES

PART NO.	DESCRIPTION
TSTATXXSEN01-B*	Outdoor Air Temperature Sensor
TSTATXXNBP01†	Backplate for Non-Programmable Thermostat
TSTATXXPBP01†	Backplate for Programmable Thermostat and Thermidistat Control
TSTATXXBBP01†	Backplate for Builder's Thermostat
TSTATXXSBP01†	Backplate for Standard Programmable Thermostat
TSTATXXCNV10‡	Thermostat Conversion Kit (4 to 5 wire) — 10 pack

* Outdoor air temperature sensor is an accessory for all Bryant electronic thermostats, except the non-programmable air conditioner version and builder's and standard programmable thermostats. It allows the temperature at a remote location (outdoors) to be displayed on the thermostat.
The outdoor air temperature sensor ***must be*** used with the dual fuel thermostat.
The outdoor air temperature sensor is included with the Thermidistat Control and dual fuel thermostat.
† This plate is designed to cover surrounding wall area located behind thermostat.
‡ Thermostat conversion kit is a 24-vac accessory that can turn a 4-wire thermostat application into a 5-wire application. This kit can also be used to replace a broken thermostat wire, or add an extra wire when needed. Do not use this kit with the AC model of the Builder's or Standard Programmable thermostat.

THERMOSTAT AND THERMIDISTAT CONTROL APPLICATION

NON-PROGRAMMABLE THERMOSTAT USAGE

INDOOR UNIT	OUTDOOR UNIT			
	Air Conditioner		Heat Pump	
	1 Speed	2 Speed	1 Speed	2 Speed
1-Stage Furnace	Model AC or HP*	Model 2S	†	Model 2S‡
2-Stage Furnace	Model AC or HP*	Model 2S	†	Model 2S‡
Typical Fan Coil	Model AC or HP*	Model 2S	Model HP	Model 2S
FK, FV Series Fan Coil	Model AC or HP*	Model 2S	Model HP	Model 2S

* Model HP thermostat must be field converted to air conditioner operation.
† Must use Programmable Dual Fuel Thermostat or Thermidistat Control in this application.
‡ Dual Fuel operation controlled by heat pump when using Model 2S Thermostat.

Non-Programmable Models

The TSTATBBNAC01-B Thermostat provides single-stage, non-programmable heat/cool temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C.

The TSTATBBNHP01-B Thermostat provides versatile 2-stage heating and single-stage cooling, non-programmable temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C. Thermostat comes factory set to operate as a heat pump model with second-stage controlling auxiliary electric heat. This model can easily be converted from heat pump operation to air conditioning operation requiring 2 stages of gas or electric heat.

The TSTATBBN2S01-B Thermostat provides versatile multiple stage, non-programmable heat/cool temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C. Thermostat is designed for 2-speed compressor bearing units. Thermostat comes factory set to operate as a heat pump model with 2-stage cooling and 3 stages of heat (third-stage controlling auxiliary electric heat). This model can easily be converted from heat pump operation to air conditioning operation requiring 2 stages of cooling and 2 stages of heating.

PROGRAMMABLE THERMOSTAT USAGE

INDOOR UNIT	OUTDOOR UNIT			
	Air Conditioner		Heat Pump	
	1 Speed	2 Speed	1 Speed	2 Speed
1-Stage Furnace	Model AC or HP*	Model 2S	Model DF	Model DF or 2S‡
2-Stage Furnace	Model AC or HP*	Model 2S	Model DF	Model DF or 2S‡
Typical Fan Coil	Model AC or HP*	Model 2S	Model HP	Model 2S
FK, FV Series Fan Coil	Model AC or HP*	Model 2S	Model HP or 2S†	Model 2S

* Model HP thermostat must be field converted to AC operation.
† For use with special 3-stage electric heat setup.
‡ Dual Fuel operation controlled by heat pump when using Model 2S thermostat.

Programmable Models

The TSTATBBPAC01-B Thermostat provides single-stage, 7-day programmable heat/cool temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C.

The TSTATBBPHP01-B Thermostat provides versatile 2-stage heating and single-stage cooling, 7-day programmable temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C. Thermostat comes factory set to operate as a heat pump model with second-stage controlling auxiliary electric heat. This model can easily be converted from heat pump operation to air conditioning operation requiring 2 stages of gas or electric heat.

The TSTATBBP2S01-B Thermostat provides versatile multiple stage, 7-day programmable heat/cool temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C. Thermostat is designed primarily for 2-speed compressor bearing units. Thermostat comes factory set to operate as a heat pump model with 2-stage cooling and 3-stages of heat (third-stage controlling auxiliary electric heat). This model can also perform intelligent heat-staging with FK & FV fan coils (special heaters and setup required) using a single-speed heat pump with 3-stages auxiliary electric heat. In addition, this model can easily be converted from heat pump operation to air conditioning operation requiring 2 stages of cooling and 2 stages of heating (e.g. gas or electric heat).

Programmable Dual Fuel Model

The TSTATBBPDF01-B Thermostat provides single-stage or multiple-stage dual fuel operation, 7-day programmable heat/cool temperature control for 24-vac systems with auto changeover. Temperature display can be selected to read °F or °C. The Dual Fuel Thermostat is designed with separate lockout temperatures for the furnace and the heat pump. The furnace is prevented from operating above its lockout temperature and the heat pump is prevented from operating below its lockout temperature. Thermostat comes factory set to operate single-speed equipment, but is easily configured to match multiple stage equipment combinations. This model requires use of the Outdoor Air Temperature Sensor accessory, which is included with the Dual Fuel Thermostat. Using the dual fuel thermostat eliminates the need for an interface control.

THERMIDISTAT CONTROL USAGE

INDOOR UNIT	OUTDOOR UNIT			
	Air Conditioner		Heat Pump	
	1 Speed	2 Speed	1 Speed	2 Speed
1-Stage Furnace	Model RH*			
2-Stage Furnace				
Typical Fan Coil				
FK, FV Series Fan Coil				

* The Thermidistat Control may be used in all applications but must be field configured for specific application.

Thermidistat Control

The TSTATBBPRH01-B Thermidistat Control provides single-stage or multiple-stage equipment operation, 7-day programmable heat/cool temperature control for 24-vac systems with auto changeover. It controls both humidification and dehumidification and can be used to control heat pumps, air conditioners, or dual fuel applications. Temperature display can be selected to read °F or °C. The Thermidistat Control is designed primarily as an extension of the programmable thermostat line to provide humidify and dehumidify outputs in controlling humidity. It can also be field configured to be non-programmable. Humidify outputs connect directly to 24-v humidifiers. Dehumidify outputs connect directly to variable-speed furnaces or fan coils that have dehumidification capabilities. To achieve full benefits, this model requires use of the Outdoor Air Temperature Sensor accessory, which is included with the Thermidistat Control. The Thermidistat Control will deliver Perfect Heat Plus mode when matched with variable-speed equipment.

OPERATIONAL INFORMATION

FIVE-MINUTE COMPRESSOR TIMEGUARD

This timer prevents the compressor from starting unless it has been off for at least 5 minutes. It can be defeated for 1 cycle by simultaneously pressing the FAN mode button and INCREASE TEMPERATURE (UP) button.

FIFTEEN-MINUTE CYCLE TIMER

This timer prevents the start of a heating or cooling cycle until at least 15 minutes after the last start of the same cycle. Its function is to assure that equipment is not cycled more than 4 times per hr. This timer is defeated for 1 cycle when the desired temperature is manually changed. It can also be defeated for 1 cycle by simultaneously pressing the FAN button and the INCREASE TEMPERATURE button.

FIFTEEN-MINUTE STAGING TIMER

In multistage heating or cooling, this timer prevents any higher stage from turning on until preceding stage has been on for 15 minutes. This timer is defeated if temperature error is greater than 5°F (usually due to a large change in desired temperature).

MINIMUM ON TIME

In normal operation, when a stage turns on, it will not turn off for a minimum of 3 minutes (2 minutes on Builder's model).

HEAT/COOL SET POINTS (DESIRED TEMPERATURE)

A minimum difference of 2°F is enforced between heating and cooling desired temperatures. This is done by allowing one setting to "push" the other, to maintain this difference. (Thermidistat Control is adjustable.) Builder's thermostats are controlled by a single set point.

EQUIPMENT ON INDICATORS (NON-PROGRAMMABLE MODELS)

When cooling equipment is ON, a COOL ON icon is displayed above the room temperature display. When heating equipment is ON, a HEAT ON icon is displayed above the room temperature display.

EQUIPMENT ON INDICATORS (THERMIDISTAT CONTROL)

When cooling equipment is ON, a COOL icon preceded by a small triangle is displayed below the cool set point. While cooling equipment turn on is delayed by a staging or cycle timer, the triangle and the word COOL will flash. The same is true for the HEAT icon and its preceding triangle located under the heat set point. The 2 triangles are also used to indicate the state of the humidify and dehumidify outputs. See next section.

HUMIDIFY/DEHUMIDIFY OUTPUT ON INDICATORS (THERMIDISTAT CONTROL)

Within humidity select screen (selected by Humidity button and indicated by "hu" or "dhu" on clock display), the triangle under humidity set point will be on while humidify output is on. The triangle under dehumidify set point will be on while dehumidify output is active (turned off, because this output is reverse logic).

AUTO CHANGEOVER

When auto changeover mode is selected, a change from heat to cool (or vice versa) will not occur until an opposite mode demand has existed for 20 minutes. If set point is changed, the 20 minute requirement is deleted. Auto changeover mode can be disabled. Builder's and Standard Programmable thermostats are manual changeover.

EMERGENCY HEAT MODE

When thermostat is controlling as a heat pump and emergency heat is selected, all Y signals are locked out, and W becomes energized upon a call for heat.

SMART RECOVERY (PROGRAMMABLE MODELS)

With Smart Recovery selected, transition out of setback begins a fixed time period before selected recovery time and gradually adjusts room temperature so that the desired temperature will be achieved at selected recovery time.

ROOM TEMPERATURE OFFSET (ALL MODELS)

Room temperature may be deliberately offset by up to 5°F in either direction.

MAXIMUM ON/OFF DEADBAND

Maximum sensed temperature difference between ON and OFF is 0.8°F for Builder's thermostats and 0.6°F for all other models.

---

bryant®
Heating & Cooling Systems

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE
WITH INSTALLATION INSTRUCTIONS

Cancels: PDS TSTAT.03

© 1999 Bryant Heating & Cooling Systems, 7310 W. Morris St., Indpls., IN 46231

PRINTED IN U.S.A. Catalog No. 12TS-TA4 7-99